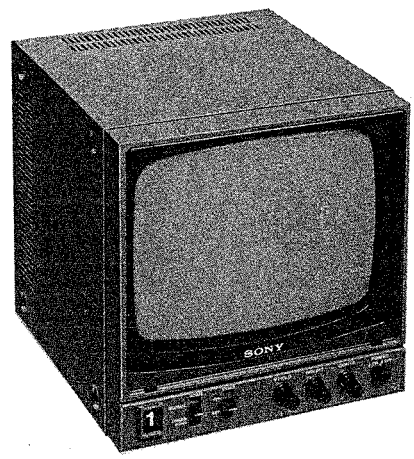
PVM-91

SERVICE MANUAL

US Model
Canadian Model



August, 1982

Note : This Service Manual contains the correction.

SPECIFICATIONS

System	EIA standard
Picture tubes	9 inches measured diagonally 90-degree deflection
Resolution	800 lines (horizontal)
Video input	Composite : 0.5 V – 2 V p-p, negative
Sync input	1 V – 8 V p-p, negative
Video/sync input impedance	High impedance for loop-through ; 75 ohms terminated
Power requirements	120 V ac, 50/60 Hz
Power consumption	38 W (max.), 29 W (average)
Dimensions	Approx. 216 × 228.5 × 246.5mm (w/h/d) ($8^5/_8 \times 9 \times 9^3/_4$ inches)
Weight	Approx. 6.1 kg (13 lb 7 oz)

Design and specifications subject to change without notice.

MICROFILM

VIDEO MONITOR

SONY®

MON

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION AU COMPOSANT AYANT RAPPORT A LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES REGLAGES DU CIRCUIT QUI SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNMENT SONT IDENTIFIÉS DANS CE MANUEL. SUIVRE LES PROCÉDURES QUAND LES COMPOSANTS CRITIQUES SONT REMPLACÉS OU LE FONCTIONNEMENT IMPROPRE EST SUSPECTÉ.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).
   Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

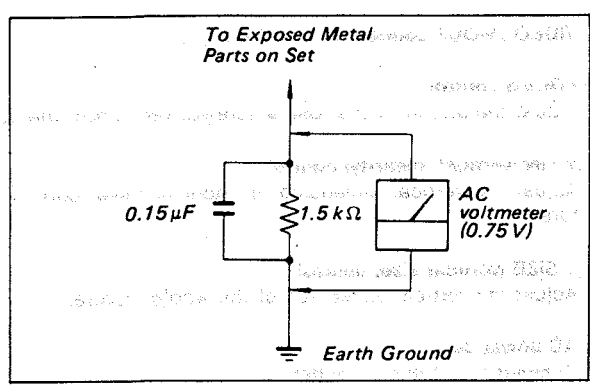


Fig. A. Using an AC voltmeter to check AC leakage.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

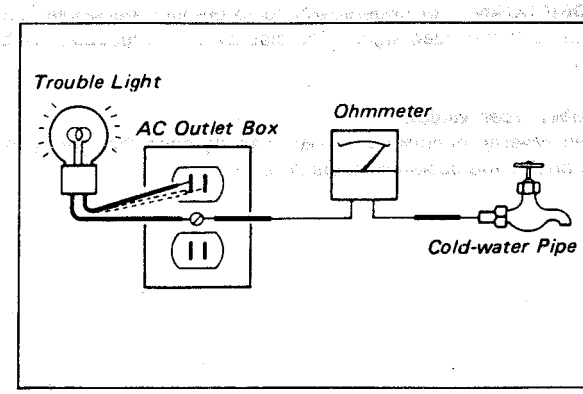
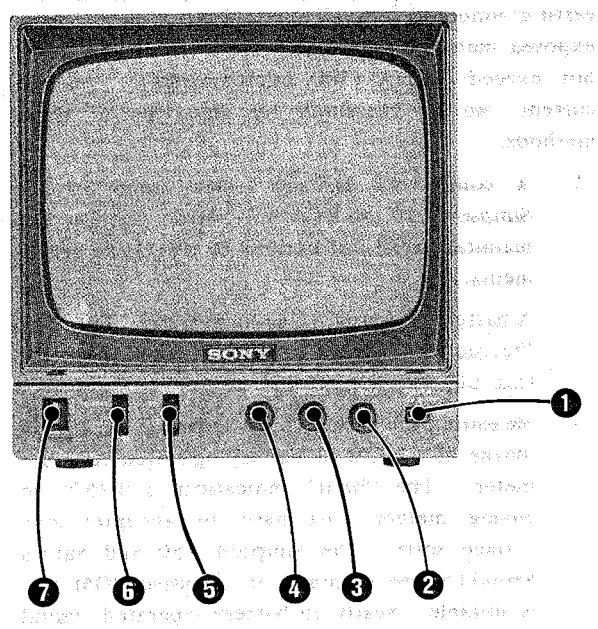
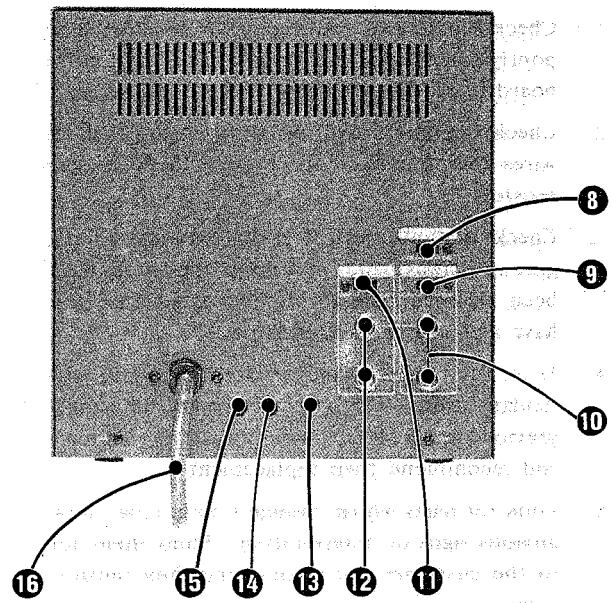


Fig. B. Checking for earth ground.

1. GENERAL

LOCATION OF CONTROLS AND CONNECTORS





Front panel

❶ POWER switch

❷ CONTRAST control

❸ BRIGHT (brightness) control

❹ V HOLD (vertical hold) control
Adjusts the vertical stability of the picture.

❺ SYNC select switch
INT: when composite video signal is supplied without external sync.
EXT: when an external pulse is supplied from an external sync generator, with either a composite or non-composite video signal.

❻ SCAN select switch
NORMAL: for normal scanning.
UNDER SCAN: for underscanning to display the whole picture containd in the video signal. The display size is reduced by about 10%.

❼ Number label window
When several monitors are used, classify each monitor by inserting one of the supplied labels (1 to 5).

Rear panel

❽ DC CLAMP switch
ON: The video signal is clamped with the pedestal voltage level, so that black level is fixed.
OFF: Black level is not fixed.

❾ SYNC 75-ohm termination switch
ON: When an equipment is not connected to the SYNC OUT connector.
OFF: When an equipment is connected to the SYNC OUT connector.

❿ SYNC IN/OUT connectors (BNC type)

⓫ VIDEO 75-ohm termination switch
ON: When the monitor is used singly or is the last of looped chain.
OFF: When another monitor is connected to the VIDEO OUT connector.

⓬ VIDEO IN/OUT connectors (BNC type)

⓭ FOCUS control
Adjust the picture focus. Use a screwdriver to turn the control.

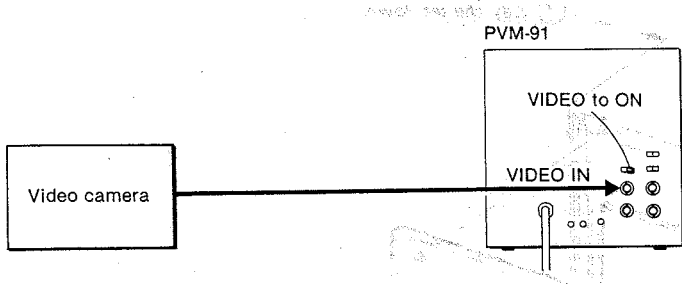
⓮ V LIN (vertical linearity) control
Adjust the vertical dimension of upper or lower part of the picture.

⓯ V SIZE (vertical size) control
Adjust the vertical dimension of the whole picture.

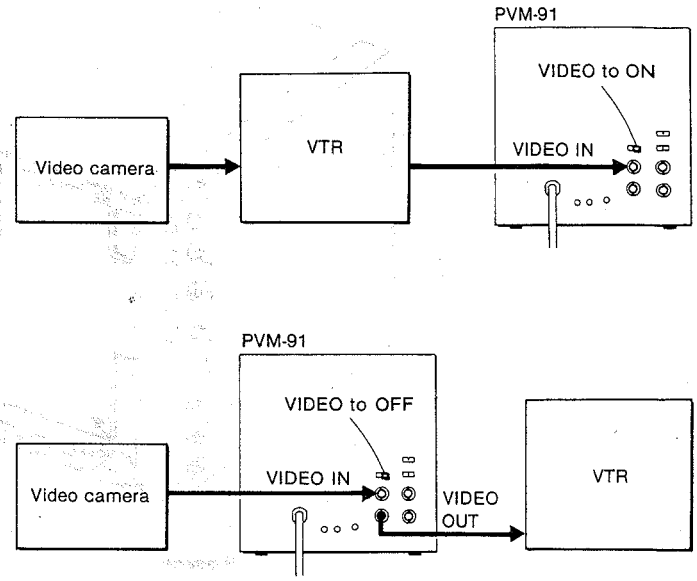
⓰ AC power cord
Connect to a 120 V ac outlet.

CONNECTION EXAMPLE

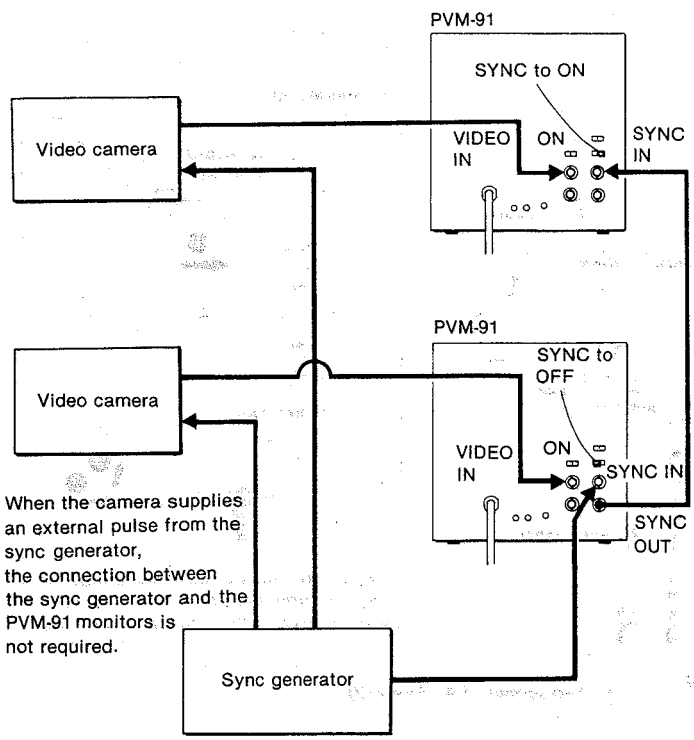
As a video camera monitor



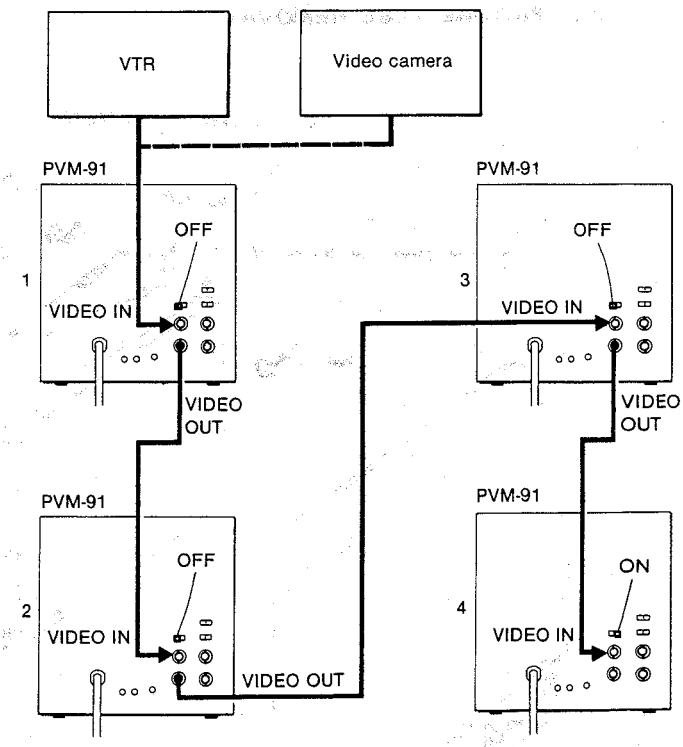
Used with a video camera and a VTR
Either connection is possible.



Used with video cameras and a sync generator



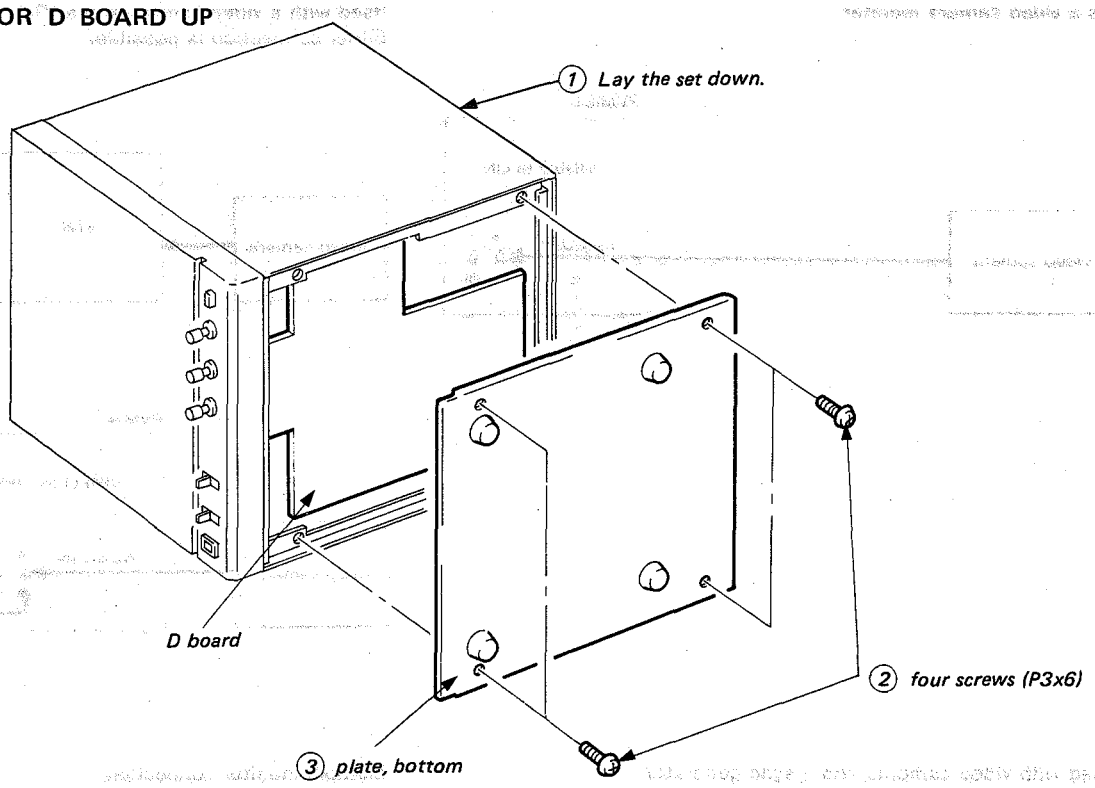
Multiple monitor connection
Up to 10 monitors may be connected.



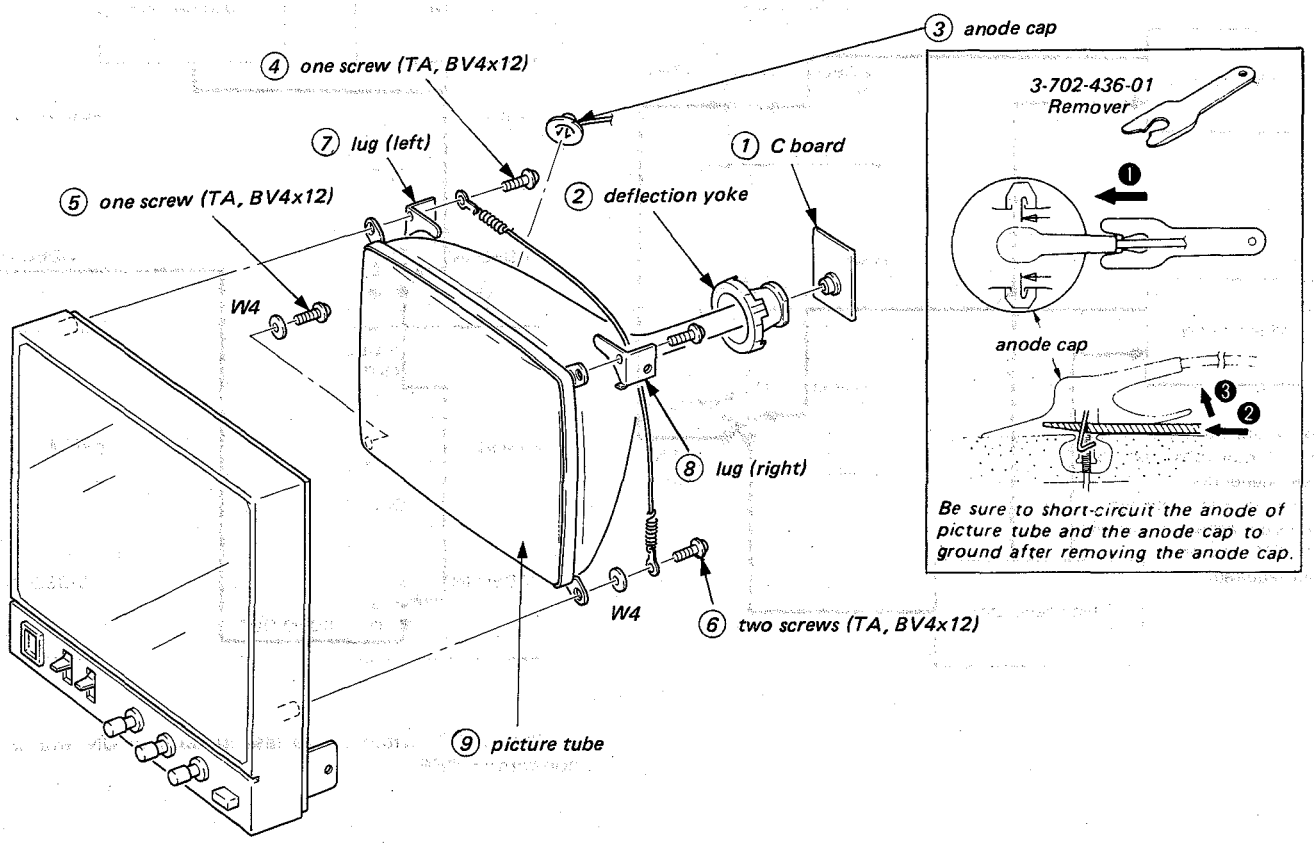
Set the VIDEO switch of the **last monitor** to ON and of the other monitors to OFF.

2. DISASSEMBLY

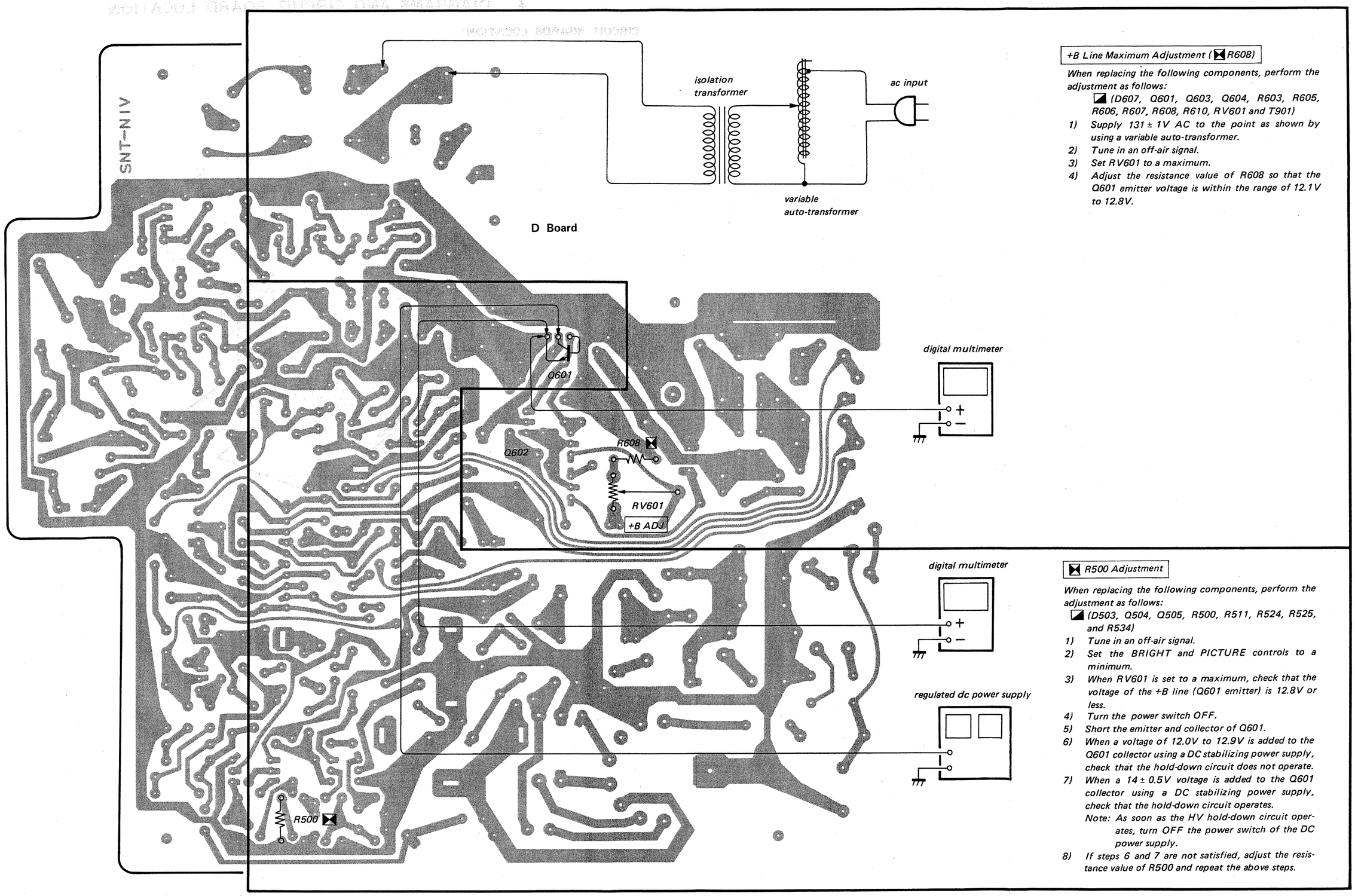
2-1. CHECKING FOR D BOARD UP



2-2. PICTURE TUBE REMOVAL



3. SAFTY RELATED ADJUSTMENTS



+B Line Maximum Adjustment (R608)

When replacing the following components, perform the adjustment as follows:

(D607, Q601, Q603, Q604, R603, R605, R606, R607, R608, R610, RV601 and T901)

1) *Supply 131 ± 1V AC to the point as shown by using a variable auto-transformer.*
2) *Tune in an off-air signal.*
3) *Set RV601 to a maximum.*
4) *Adjust the resistance value of R608 so that the Q601 emitter voltage is within the range of 12.1V to 12.8V.*

R500 Adjustment

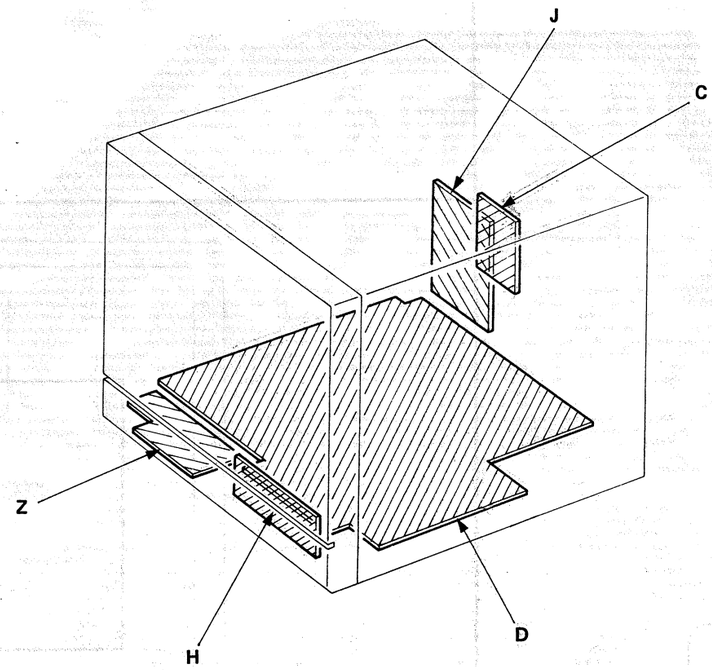
When replacing the following components, perform the adjustment as follows:

(D503, Q504, Q505, R500, R511, R524, R525, and R534)

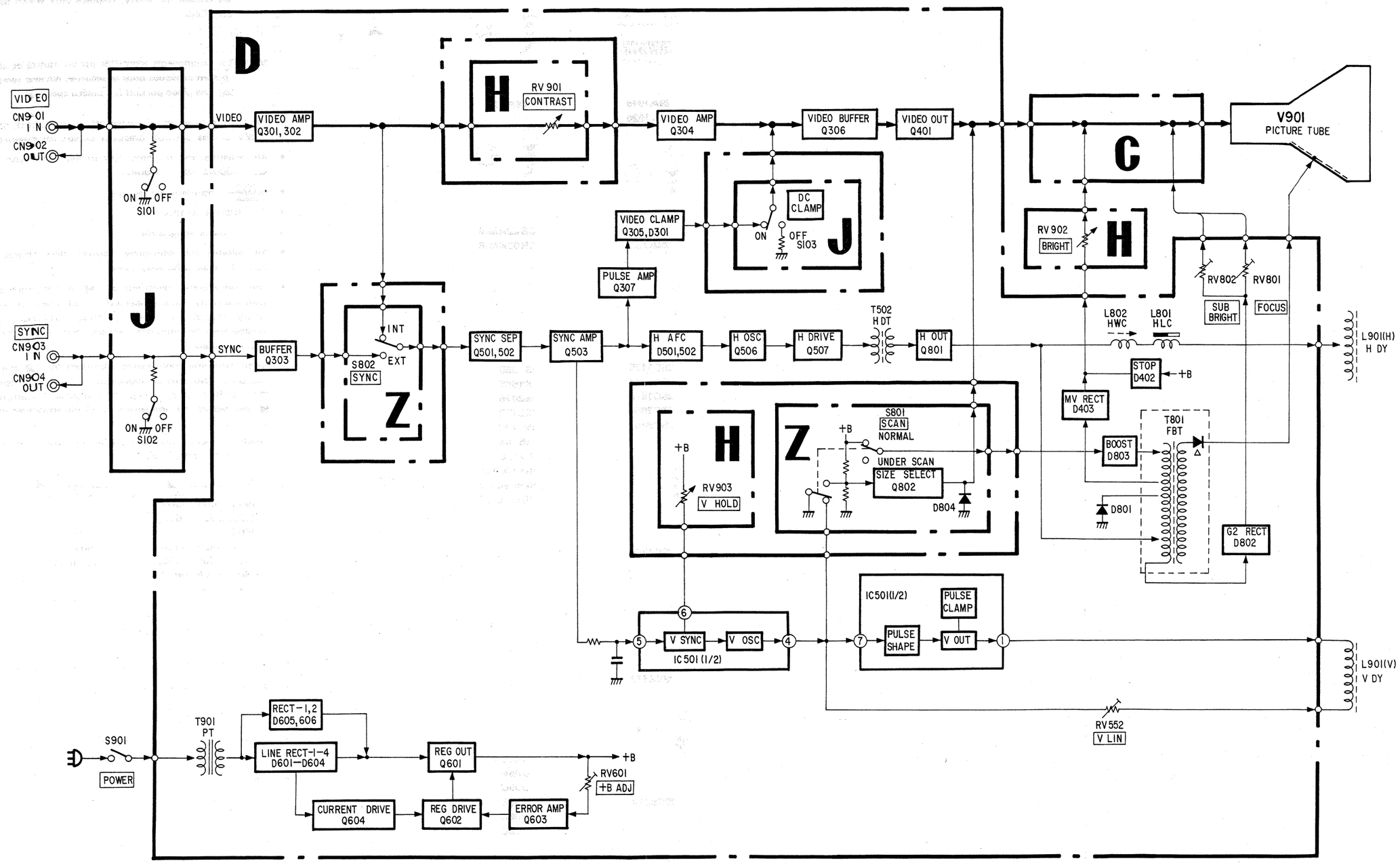
1) *Tune in an off-air signal.*
2) *Set the BRIGHT and PICTURE controls to a minimum.*
3) *When RV601 is set to a maximum, check that the voltage of the +B line (Q601 emitter) is 12.8V or less.*
4) *Turn the power switch OFF.*
5) *Short the emitter and collector of Q601.*
6) *When a voltage of 12.0V to 12.9V is added to the Q601 collector using a DC stabilizing power supply, check that the hold-down circuit does not operate.*
7) *When a 14 ± 0.5V voltage is added to the Q601 collector using a DC stabilizing power supply, check that the hold-down circuit operates.*
   Note: As soon as the HV hold-down circuit operates, turn OFF the power switch of the DC power supply.
8) *If steps 6 and 7 are not satisfied, adjust the resistance value of R500 and repeat the above steps.*

4. DIAGRAMS AND CIRCUIT BOARD LOCATION

CIRCUIT BOARDS LOCATION

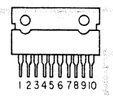


BLOCK DIAGRAM

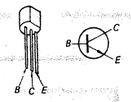


SEMICONDUCTORS

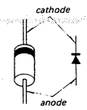
μPC1031H



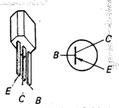
2SD789



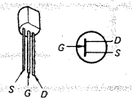
RH1C



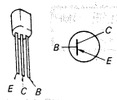
2SA1015
2SA1026



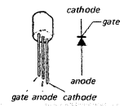
2SK30A



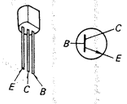
2SA733



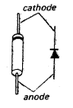
CR02AM-4
CR02AM-8



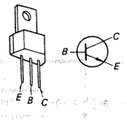
2SC1475
2SC1811
2SC1815
2SC2603
2SC945



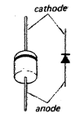
1S1555
1S1585
1S2076
1S2473
1SS133
1SS148
RD13E
RD13E-L3
RD5.6E-L2
RD5.6E-L3



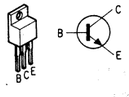
2SC1826



1SS119

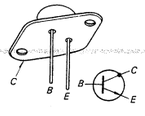


2SC2373



GU3SY
U05E
U05G
U06E
V06C
V09C

2SC681A



SCHEMATIC DIAGRAM

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

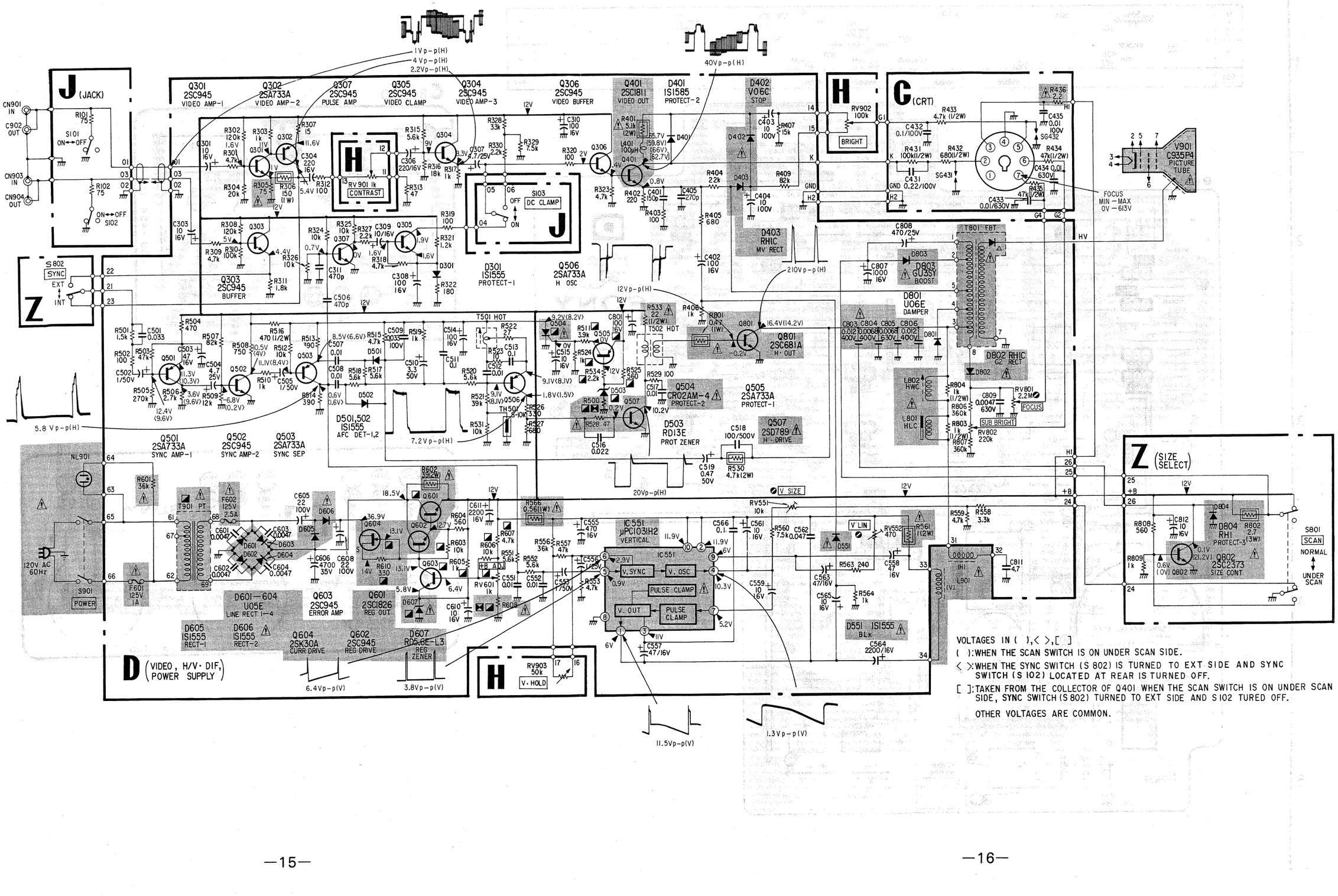
Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ = 1000Ω, MΩ = 1000kΩ
- : nonflamable resistor.
- △ : internal component.
- : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪ mark the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⧓ and repeat the adjustment until the specified value is achieved.

  When replacing the part in below table, be sure to perform the related adjustment.

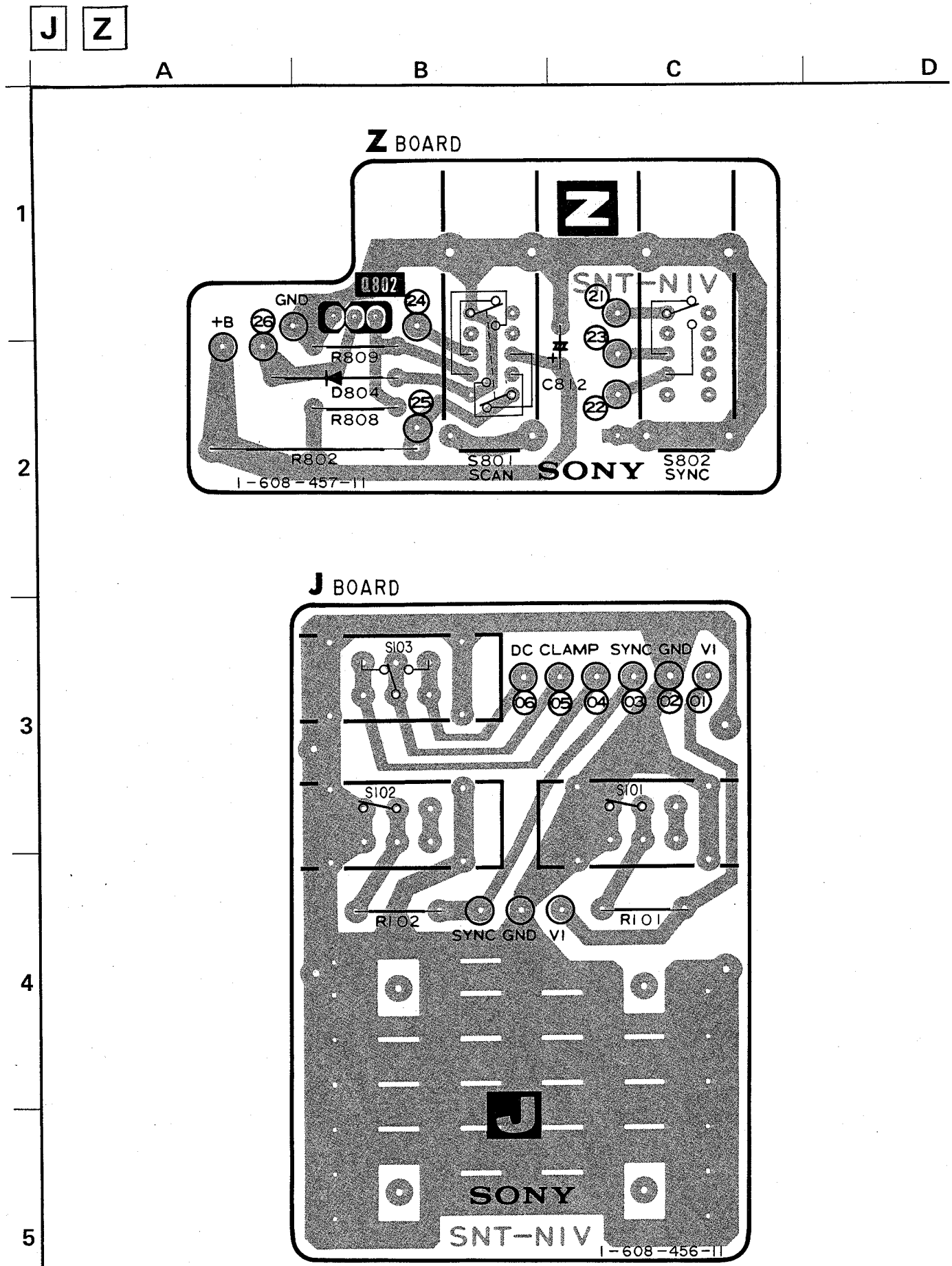
Part replaced (◪)	Adjustment (⧓)
D503, D607, Q504, Q505, Q601, Q603, Q604, R500, R511, R524, R525, R534, R603, R605, R606, R607, R608, R610, RV601, T901	R500 R608 adjustment

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10MΩ digital multimeter.
- ◐ : adjustable without removing cabinet.
- : adjustment for repair.
- Voltage variations may be noted due to normal production tolerances.
- —— : B + bus.


C D H J Z
A B C D E F G
1 2 3 4 5
J (JACK)
VIDEO
SYNC
CN901 IN
C902 OUT
CN903 IN
CN904 OUT
S101 ON↔OFF
S102 ON↔OFF
Z
S802 SYNC EXT INT
Q301 2SC945 VIDEO AMP-1
Q302 2SA733A VIDEO AMP-2
Q307 2SC945 PULSE AMP
Q305 2SC945 VIDEO CLAMP
Q304 2SC945 VIDEO AMP-3
Q306 2SC945 VIDEO BUFFER
Q401 2SC1811 VIDEO OUT
D401 IS1585 PROTECT-2
D402 V06C STOP
H
RV902 100k BRIGHT
C (CRT)
RV901 1k CONTRAST
S103 DC CLAMP
D301 IS1555 PROTECT-1
Q506 2SA733A H OSC
Q303 2SC945 BUFFER
D403 RHIC MV RECT
D803 GU3SY BOOST
D801 U06E DAMPER
T801 FBT
DB02 RHIC G2 RECT
L802 HWC
L801 HLC
RV801 FOCUS
SUB BRIGHT
RV802 220k
V901 C35P4 PICTURE TUBE
FOCUS MIN — MAX 0V — 6I3V
T501 HOT
T502 HDT
Q501 2SA733A SYNC AMP-1
Q502 2SC945 SYNC AMP-2
Q503 2SA733A SYNC SEP
D501,502 IS1555 AFC DET-1,2
Q504 CR02AM-4 PROTECT-2
Q505 2SA733A PROTECT-1
D503 RD13E PROT ZENER
Q507 2SD789 H-DRIVE
Q801 2SC681A H-OUT
Z (SIZE SELECT)
S801 SCAN NORMAL UNDER SCAN
D804 RHI PROTECT-3
Q802 2SC2373 SIZE CONT
V SIZE
V LIN
IC551 μPC1031H2 VERTICAL
V. SYNC
V. OSC
PULSE CLAMP
V. OUT
PULSE CLAMP
D551 IS1555 BLK
NL901
S901 POWER
T901 PT
F601 125V 1A
F602 125V 2.5A
D601—604 U05E LINE RECT 1—4
D605 IS1555 RECT-1
D606 IS1555 RECT-2
Q603 2SC945 ERROR AMP
Q601 2SC1826 REG OUT
Q604 2SK30A CURR DRIVE
Q602 2SC945 REG DRIVE
D607 RD5.6E-L3 REG ZENER
D
(VIDEO, H/V·DIF, POWER SUPPLY)
H
RV903 50k V·HOLD
1Vp-p(H)
4Vp-p(H)
2.2Vp-p(H)
40Vp-p(H)
12Vp-p(H)
210Vp-p(H)
5.8Vp-p(H)
7.2Vp-p(H)
20Vp-p(H)
6.4Vp-p(V)
3.8Vp-p(V)
11.5Vp-p(V)
1.3Vp-p(V)
VOLTAGES IN ( ),< >,[ ]
( ):WHEN THE SCAN SWITCH IS ON UNDER SCAN SIDE.
< >:WHEN THE SYNC SWITCH (S 802) IS TURNED TO EXT SIDE AND SYNC SWITCH (S 102) LOCATED AT REAR IS TURNED OFF.
[ ]:TAKEN FROM THE COLLECTOR OF Q401 WHEN THE SCAN SWITCH IS ON UNDER SCAN SIDE, SYNC SWITCH (S 802) TURNED TO EXT SIDE AND S 102 TURED OFF.
OTHER VOLTAGES ARE COMMON.

PRINTED WIRING BOARD **D** **C** **H**

| | | |


J
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Q802
GND
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R809
D804
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R808
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S801
SCAN
C812
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SNT-NIV
SONY
S802
SYNC
1-608-457-11
J BOARD
SI03
DC CLAMP SYNC GND VI
06 05 04 03 02 01
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RI02
SYNC GND VI
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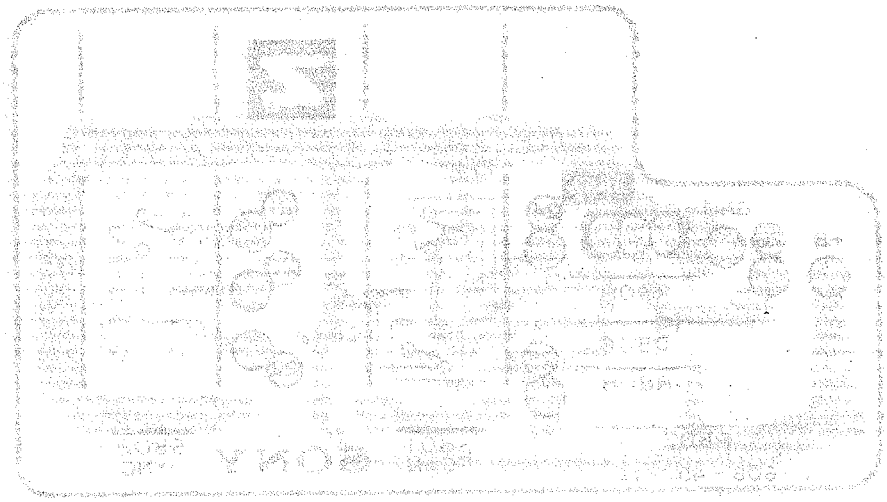
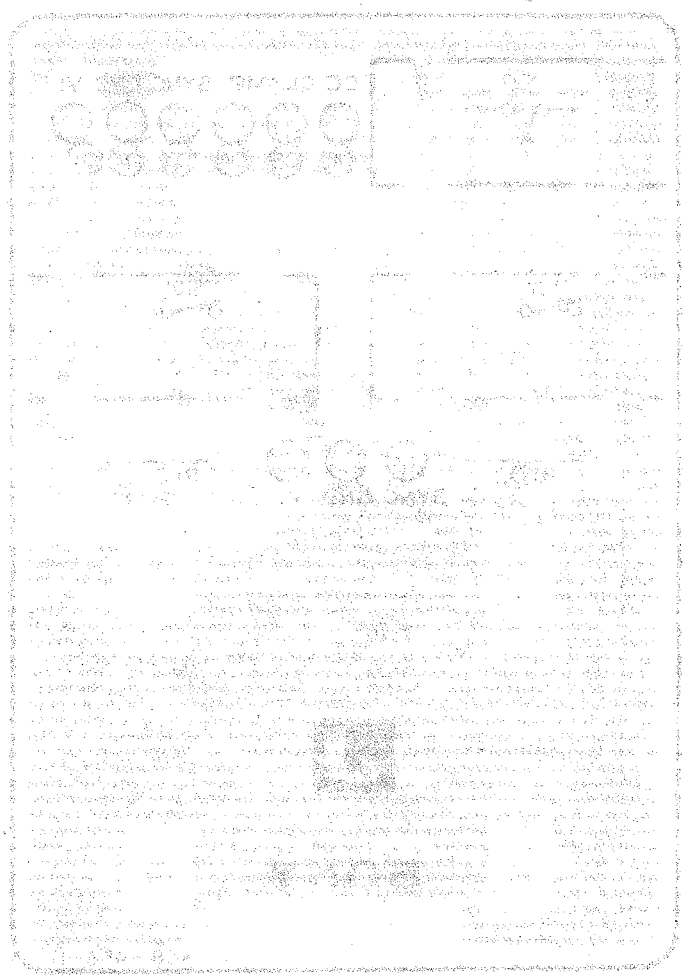
SONY
SNT-NIV
1-608-456-11





5. EXPLODED VIEWS

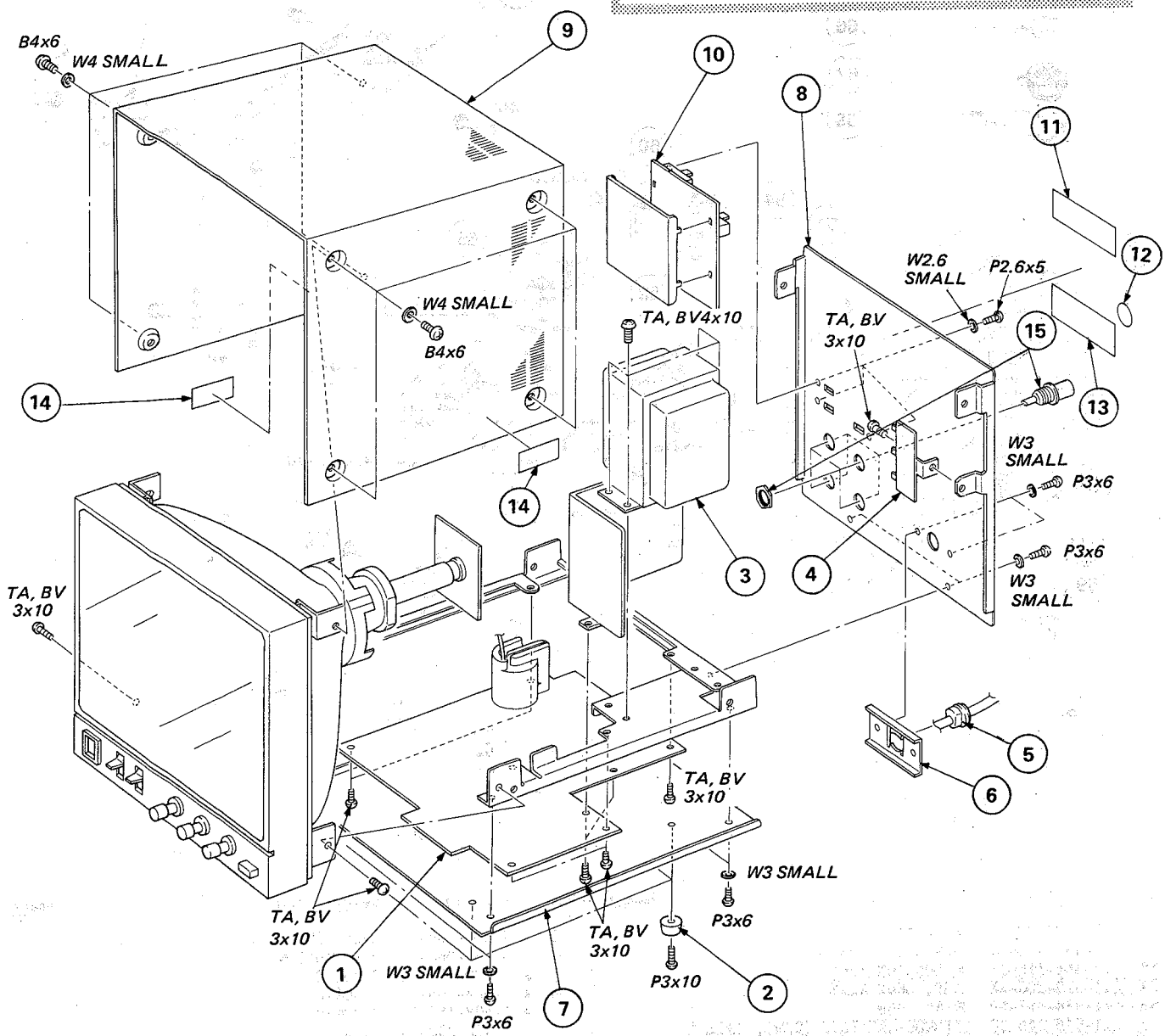
NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

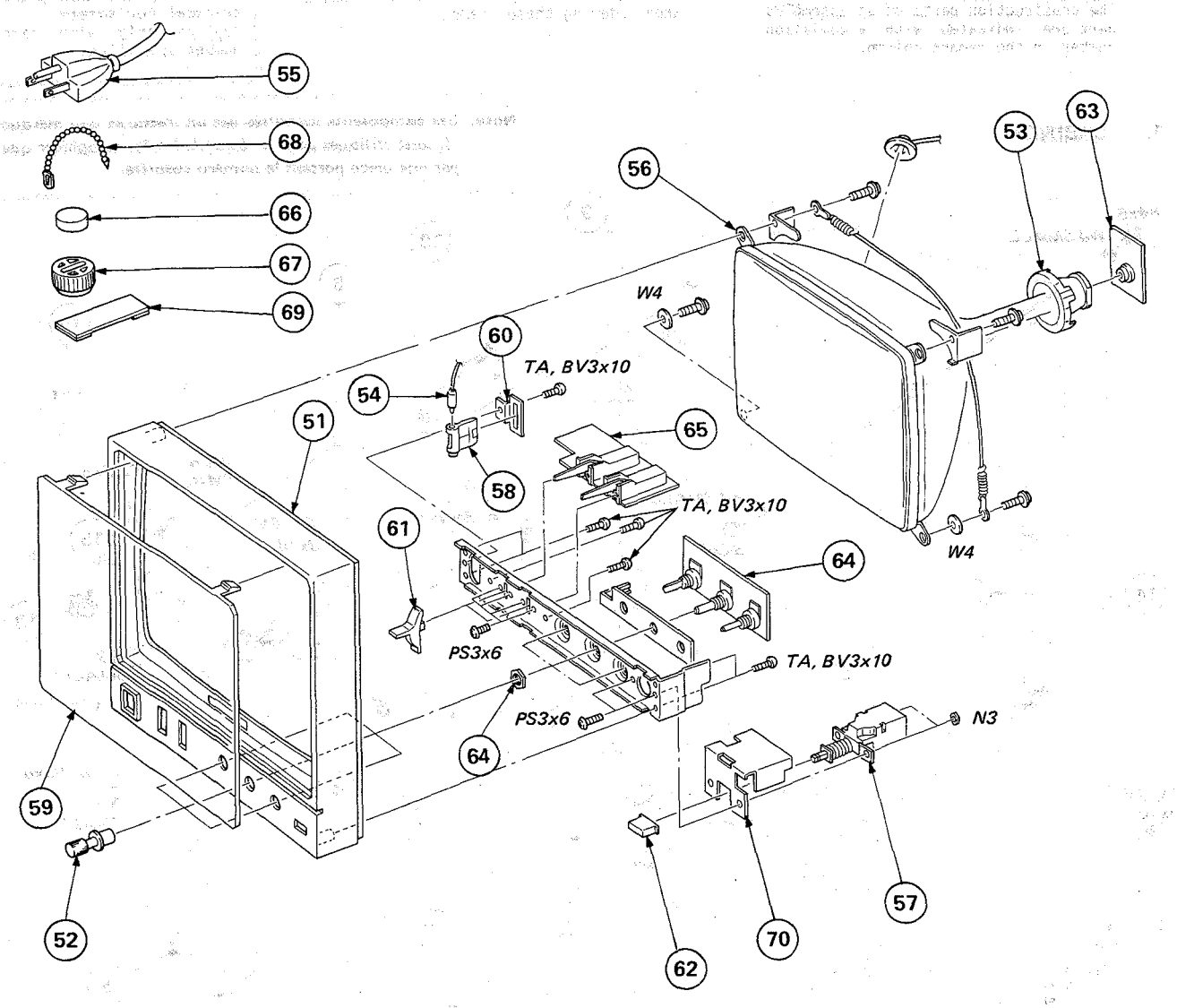
Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

1. CABINET



No.	Part No.	Description	Remark
1	♦:A-1340-481-A	D BOARD, COMPLETE	
2	X-4861-312-0	FOOT ASSY, MF	
3	⚠ 1-447-388-00	TRANSFORMER, POWER	
4	1-536-392-XX	L-TYPE TERMINAL STRIP	
5	⚠ 2-045-063-00	STOPPER, CORD	
6	♦:4-025-824-00	HOLDER, BUSHING	
7	♦:4-027-213-00	PLATE, BOTTOM	
8	4-027-214-00	PANEL, REAR	
9	4-027-217-00	CABINET	
10	♦:1-608-456-11	J BOARD	
11	3-701-829-01	LABEL, X-RAY CERTIF. (CND)	
12	3-701-915-01	LABEL, UL	
13	♦:4-027-301-00	LABEL, MODEL NUMBER (CND)	
14	3-703-079-21	LABEL, CAUTION (BACK)	
15	1-561-167-00	CONNECTOR	

2. BEZEL



No.	Part No.	Description	Remark
51	X-4027-202-0	BEZEL ASSY	
52	X-4316-209-0	KNOB ASSY, CONTROL	
53	⚠.1-451-216-21	DEFLECTION YOKE	
54	⚠.1-519-108-XX	LAMP, NEON ASSY	
55	⚠.1-534-517-00	3P AC CORD	
56	⚠.1-546-046-00	CATHODE-RAY TUBE (B/W), C935P4	
57	⚠.1-552-895-00	SWITCH, PUSH	
58	♦:4-027-202-00	HOLDER, LAMP	
59	4-027-212-00	FILTER	
60	♦:4-308-211-00	HOLDER, NEON LAMP	

No.	Part No.	Description	Remark
61	4-335-954-02	KNOB (2P), LEVER SWITCH	
62	4-335-962-00	PUSH BUTTON	
63	♦:1-608-454-11	C BOARD	
64	♦:1-608-455-11	H BOARD	
65	♦:1-608-457-11	Z BOARD	
66	1-452-032-00	MAGNET, DISC	
67	1-452-094-00	MAGNET, ROTATABLE DISK; 15mmϕ	
68	4-308-870-00	CLIP, LEAD WIRE	
69	X-4309-608-0	PERMALLOY ASSY, CONVERGENCE	
70	♦:4-027-218-00	BARRIER	

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

6. ELECTRICAL PARTS LIST

C D

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

RESISTORS
- All resistors are in ohms
- F : nonflammable

COILS
- MMH : mH, UH : μH

- The components identified by ◘ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

CAPACITORS
- MF : μF, PF : μμF

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description			Remark
♦:	1-608-454-00	C BOARD *******			
	1-526-521-XX	SOCKET, ELECTRONIC TUBE			
		CAPACITOR			
C431	1-108-393-00	MYLAR	0.22MF	10%	100V
C432	1-108-389-00	MYLAR	0.1MF	10%	100V
C433	1-129-714-00	FILM	0.01MF	10%	630V
C434	1-129-714-00	FILM	0.01MF	10%	630V
C435	1-108-377-00	MYLAR	0.01MF	10%	100V
		RESISTOR			
R431	1-202-621-00	COMPOSITION	100K 5%	1/2W	
R432	1-202-569-00	COMPOSITION	680 5%	1/2W	
R433	1-202-589-00	COMPOSITION	4.7K 5%	1/2W	
R434	1-202-613-00	COMPOSITION	47K 5%	1/2W	
R435	1-202-613-00	COMPOSITION	47K 5%	1/2W	
R436	⚠1-202-309-35	COMPOSITION	2.2 10%	1/4W	
		SPARK GAP			
SG431	1-519-063-XX	DISCHARGING GAP			
SG432	1-519-063-XX	DISCHARGING GAP			
**********					
♦:	A-1340-481-A	D BOARD, COMPLETE **********			
		CAPACITOR			
C301	1-123-356-00	ELECT	10MF	20%	16V
C303	1-123-356-00	ELECT	10MF	20%	16V
C304	1-123-321-00	ELECT	220MF	20%	16V
C306	1-123-321-00	ELECT	220MF	20%	16V
C307	1-123-328-00	ELECT	4.7MF	20%	25V
C308	1-123-333-00	ELECT	100MF	20%	16V
C309	1-123-356-00	ELECT	10MF	20%	16V
C310	1-123-333-00	ELECT	100MF	20%	16V
C311	1-102-836-00	CERAMIC	470PF	10%	50V
C401	1-102-108-00	CERAMIC	150PF	10%	50V
C402	1-123-333-00	ELECT	100MF	20%	16V
C403	1-123-384-00	ELECT	10MF	20%	100V
C404	1-123-384-00	ELECT	10MF	20%	100V
C405	1-102-111-00	CERAMIC	270PF	10%	50V
C500	1-108-837-00	MYLAR	0.01MF	10%	50V
C501	1-108-244-00	MYLAR	0.033MF	10%	50V
C502	1-123-380-00	ELECT	1MF	20%	50V
C503	1-123-332-00	ELECT	47MF	20%	16V
C504	1-123-328-00	ELECT	4.7MF	20%	25V
C505	1-123-380-00	ELECT	1MF	20%	50V
C506	1-102-836-00	CERAMIC	470PF	10%	50V
C507	1-108-837-00	MYLAR	0.01MF	10%	50V
C508	1-108-837-00	MYLAR	0.01MF	10%	50V
C509	1-108-383-00	MYLAR	0.033MF	10%	100V
C510	1-123-382-00	ELECT	3.3MF	20%	50V
C511	1-108-849-00	MYLAR	0.1MF	10%	50V
C512	1-108-837-00	MYLAR	0.01MF	10%	50V
C513	1-108-849-00	MYLAR	0.1MF	10%	50V
C514	1-123-333-00	ELECT	100MF	20%	16V
C515	1-123-356-00	ELECT	10MF	20%	16V
C516	1-108-242-00	MYLAR	0.022MF	10%	50V
C517	1-108-837-00	MYLAR	0.01MF	10%	50V
C518	1-101-810-00	CERAMIC	100PF	5%	500V
C519	1-123-379-00	ELECT	0.47MF	20%	50V
C551	1-108-837-00	MYLAR	0.01MF	10%	50V
C552	1-108-837-00	MYLAR	0.01MF	10%	50V
C553	1-123-380-00	ELECT	1MF	20%	50V
C555	1-123-323-00	ELECT	470MF	20%	16V
C556	1-131-498-51	TANTALUM	1MF	20%	25V
C557	1-123-332-00	ELECT	47MF	20%	16V
C558	1-123-332-00	ELECT	47MF	20%	16V
C559	1-131-371-00	TANTALUM	10MF	20%	16V
C561	1-131-371-00	TANTALUM	10MF	20%	16V
C562	1-108-845-00	MYLAR	0.047MF	10%	50V
C563	1-123-332-00	ELECT	47MF	20%	16V
C564	1-123-325-00	ELECT	2200MF	20%	16V
C565	1-123-356-00	ELECT	10MF	20%	16V
C566	1-108-849-00	MYLAR	0.1MF	10%	50V
C601	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C602	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C603	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C604	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C605	1-123-385-00	ELECT	22MF	20%	100V
C606	1-123-738-00	ELECT	4700MF	20%	35V
C608	1-123-385-00	ELECT	22MF	20%	100V
C610	1-123-356-00	ELECT	10MF	20%	16V
C611	1-123-325-00	ELECT	2200MF	20%	16V
C801	1-123-333-00	ELECT	100MF	20%	16V
C803	⚠1-130-951-00	FILM	0.012MF	3%	400V
C804	⚠1-130-953-00	FILM	0.0068MF	3%	400V
C805	⚠1-130-953-00	FILM	0.0068MF	3%	630V
C806	⚠1-130-951-00	FILM	0.012MF	3%	400V
C807	1-123-324-00	ELECT	1000MF	20%	16V
C808	1-123-989-00	ELECT	470MF	20%	25V
C809	1-129-710-00	FILM	0.0047MF	10%	630V
C811	1-123-908-00	ELECT	4.7MF	20%	25V
		DIODE			
D301	8-719-815-55	DIODE 1S1555			
D401	8-719-815-85	DIODE 1S1585			
D402	⚠8-719-900-63	DIODE V06C			
D403	⚠8-719-300-70	DIODE RH1C			
D501	8-719-815-55	DIODE 1S1555			
D502	8-719-815-55	DIODE 1S1555			
D503	=>8-719-113-07	DIODE RD13E-L2			
D551	⚠8-719-815-55	DIODE 1S1555			
D601	⚠8-719-911-55	DIODE U05E			

D

Ref.No.	Part No.	Description	Remark
D602	⚠ 8-719-911-55	DIODE U05E	
D603	⚠ 8-719-911-55	DIODE U05E	
D604	⚠ 8-719-911-55	DIODE U05E	
D605	⚠ 8-719-815-55	DIODE 1S1555	
D606	⚠ 8-719-815-55	DIODE 1S1555	
D607	⚠ 8-719-101-59	DIODE RD5.6E-L3	
D801	⇒ 8-719-901-55	DIODE U05G	
D802	⚠ 8-719-300-70	DIODE RH1C	
D803	⚠ 8-719-300-00	DIODE GU3SY	
		FUSE	
F601	⚠ 1-532-536-00	FUSE, GLASS-TUBE, 125V 1A	
	♦ 1-533-087-00	HOLDER, FUSE, F601	
F602	⚠ 1-532-562-00	FUSE, GLASS TUBE, 125V 2.5A	
	♦ 1-533-087-00	HOLDER, FUSE, F602	
		IC	
IC551	⚠ 8-759-110-31	IC UPC1031H	
		COIL	
L401	⚠ 1-407-705-00	MICRO INDUCTOR 100UH	
L801	⚠ 1-459-427-00	COIL, HORIZONTAL LINEARITY, HLC	
L802	⚠ 1-459-330-12	RES, VAR (HWC)	
		TRANSISTOR	
Q301	⇒ 8-729-606-32	TRANSISTOR 2SC2603	
Q302	⇒ 8-729-201-52	TRANSISTOR 2SA1015	
Q303	⇒ 8-729-606-32	TRANSISTOR 2SC2603	
Q304	⇒ 8-729-606-32	TRANSISTOR 2SC2603	
Q305	⇒ 8-729-606-32	TRANSISTOR 2SC2603	
Q306	⇒ 8-729-606-32	TRANSISTOR 2SC2603	
Q307	⇒ 8-729-606-32	TRANSISTOR 2SC2603	
Q401	⚠ 8-765-012-20	TRANSISTOR 2SC1811	
Q501	⇒ 8-729-201-52	TRANSISTOR 2SA1015	
Q502	⇒ 8-729-606-32	TRANSISTOR 2SC2603	
Q503	⇒ 8-729-201-52	TRANSISTOR 2SA1015	
Q504	⚠ 8-719-000-28	THYRISTOR CR02AM-4	
Q505	⇒ 8-729-201-52	TRANSISTOR 2SA1015	
Q506	⇒ 8-729-201-52	TRANSISTOR 2SA1015	
Q507	⚠ 8-729-378-91	TRANSISTOR 2SD789	
Q601	⚠ 8-729-382-63	TRANSISTOR 2SC1826-Y	
Q602	⚠ 8-729-606-32	TRANSISTOR 2SC2603	
Q603	⇒ 8-729-606-32	TRANSISTOR 2SC2603	
Q604	⚠ 8-729-203-04	TRANSISTOR 2SK30A	
Q801	⚠ 1-806-308-11	TRANSISTOR 2SC681A	
		RESISTOR	
R301	1-246-489-00	CARBON 4.7K 5% 1/4W	
R302	1-246-523-00	CARBON 120K 5% 1/4W	
R303	1-246-473-00	CARBON 1K 5% 1/4W	
R304	1-246-504-00	CARBON 20K 5% 1/4W	
R305	⚠ 1-246-446-00	CARBON 75 5% 1/4W	
R306	1-213-133-00	METAL 150 5% 1W F	
R307	1-246-429-00	CARBON 15 5% 1/4W	
R308	1-246-523-00	CARBON 120K 5% 1/4W	
R309	1-246-489-00	CARBON 4.7K 5% 1/4W	
R310	1-246-521-00	CARBON 100K 5% 1/4W	
R311	1-246-479-00	CARBON 1.8K 5% 1/4W	
R312	1-246-449-00	CARBON 100 5% 1/4W	
R313	1-246-441-00	CARBON 47 5% 1/4W	
R315	1-246-491-00	CARBON 5.6K 5% 1/4W	
R316	1-246-503-00	CARBON 18K 5% 1/4W	
R317	1-246-473-00	CARBON 1K 5% 1/4W	
R318	1-246-489-00	CARBON 4.7K 5% 1/4W	
R319	1-246-449-00	CARBON 100 5% 1/4W	
R320	1-246-449-00	CARBON 100 5% 1/4W	
R321	1-246-475-00	CARBON 1.2K 5% 1/4W	
R322	1-246-455-00	CARBON 180 5% 1/4W	
R323	1-246-489-00	CARBON 4.7K 5% 1/4W	
R324	1-246-497-00	CARBON 10K 5% 1/4W	
R325	1-246-497-00	CARBON 10K 5% 1/4W	
R326	1-246-497-00	CARBON 10K 5% 1/4W	
R327	1-246-481-00	CARBON 2.2K 5% 1/4W	
R328	1-246-509-00	CARBON 33K 5% 1/4W	
R329	1-246-494-00	CARBON 7.5K 5% 1/4W	
R330	1-246-481-00	CARBON 2.2K 5% 1/4W	
R401	⚠ 1-206-681-00	METAL 5.1K 5% 2W F	
R402	1-246-457-00	CARBON 220 5% 1/4W	
R403	1-246-449-00	CARBON 100 5% 1/4W	
R404	1-246-505-00	CARBON 22K 5% 1/4W	
R405	1-246-469-00	CARBON 680 5% 1/4W	
R406	1-246-473-00	CARBON 1K 5% 1/4W	
R407	1-246-501-00	CARBON 15K 5% 1/4W	
R409	1-246-519-00	CARBON 82K 5% 1/4W	
⊠R500	⚠	CARBON 1/4W	
R501	1-246-477-00	CARBON 1.5K 5% 1/4W	
R502	1-246-449-00	CARBON 100 5% 1/4W	
R503	1-246-513-00	CARBON 47K 5% 1/4W	
R504	1-246-465-00	CARBON 470 5% 1/4W	
R505	1-246-531-00	CARBON 270K 5% 1/4W	
R506	1-246-483-00	CARBON 2.7K 5% 1/4W	
R507	1-246-519-00	CARBON 82K 5% 1/4W	
R508	1-246-470-00	CARBON 750 5% 1/4W	
R509	1-246-499-00	CARBON 12K 5% 1/4W	
R510	1-246-473-00	CARBON 1K 5% 1/4W	
R511	1-246-487-00	CARBON 3.9K 5% 1/4W	
R512	1-246-497-00	CARBON 10K 5% 1/4W	
R513	1-246-463-00	CARBON 390 5% 1/4W	
R514	1-246-463-00	CARBON 390 5% 1/4W	
R515	1-246-489-00	CARBON 4.7K 5% 1/4W	
R516	1-244-865-00	CARBON 470 5% 1/2W	
R517	1-246-491-00	CARBON 5.6K 5% 1/4W	
R518	1-246-491-00	CARBON 5.6K 5% 1/4W	
R519	1-246-473-00	CARBON 1K 5% 1/4W	
R520	1-246-491-00	CARBON 5.6K 5% 1/4W	
R521	1-246-511-00	CARBON 39K 5% 1/4W	

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

- **The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.**

When indicating parts by reference number, please include the board name.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

D H J Z

Ref.No.	Part No.	Description				Remark
R522	1-246-435-00	CARBON	27	5%	1/4W	
R523	1-246-425-00	CARBON	10	5%	1/4W	
R524	1-246-473-00	CARBON	1K	5%	1/4W	
R525	1-246-467-00	CARBON	560	5%	1/4W	
R526	1-246-461-00	CARBON	330	5%	1/4W	
R527	1-246-469-00	CARBON	680	5%	1/4W	
R528 ⚠	1-246-441-00	CARBON	47	5%	1/4W	
R529	1-246-449-00	CARBON	100	5%	1/4W	
R530	1-206-680-00	METAL	4.7K	5%	2W	F
R531	1-246-497-00	CARBON	10K	5%	1/4W	
R533 ⚠	1-211-598-00	CARBON	22	5%	1/2W	F
R534	1-246-481-00	CARBON	2.2K	5%	1/4W	
R551	1-246-491-00	CARBON	5.6K	5%	1/4W	
R552	1-246-491-00	CARBON	5.6K	5%	1/4W	
R553	1-246-489-00	CARBON	4.7K	5%	1/4W	
R556	1-246-510-00	CARBON	36K	5%	1/4W	
R557	1-246-513-00	CARBON	47K	5%	1/4W	
R558	1-246-485-00	CARBON	3.3K	5%	1/4W	
R559	1-246-489-00	CARBON	4.7K	5%	1/4W	
R560	1-246-494-00	CARBON	7.5K	5%	1/4W	
R561 ⚠	1-206-439-00	METAL	1	5%	2W	F
R563	1-246-458-00	CARBON	240	5%	1/4W	
R564	1-246-473-00	CARBON	1K	5%	1/4W	
R566 ⚠	1-212-357-61	METAL	0.56	5%	1W	F
R601 ⚠	1-246-510-00	CARBON	36K	5%	1/4W	
R602 ⚠	1-206-477-00	METAL	39	5%	2W	F
R603	1-246-497-00	CARBON	10K	5%	1/4W	
R604	1-246-467-00	CARBON	560	5%	1/4W	
R605	1-246-473-00	CARBON	1K	5%	1/4W	
R606	1-246-497-00	CARBON	10K	5%	1/4W	
R607	1-246-489-00	CARBON	4.7K	5%	1/4W	
R610 ⚠	1-246-461-00	CARBON	330	5%	1/4W	
R801 ⚠	1-212-356-00	METAL	0.47	5%	1W	F
R803	1-244-873-00	CARBON	1K	5%	1/2W	
R804	1-244-873-00	CARBON	1K	5%	1/2W	
R806	1-246-534-00	CARBON	360K	5%	1/4W	
R807	1-246-534-00	CARBON	360K	5%	1/4W	
⧓ R608 ⚠		CARBON			1/4W	

VARIABLE RESISTOR

RV551	1-226-100-00	RES, ADJ, CARBON	10K
RV552	1-224-965-00	RES, ADJ, CARBON	470
RV601	1-226-819-00	RES, ADJ, CARBON	1K
RV801	1-226-263-00	RES, ADJ, CARBON	2.2M
RV802	1-224-551-00	RES, ADJ, CARBON	220K

TRANSFORMER

T501	1-405-760-00	COIL, OSC, HOT
T502	1-437-021-00	TRANSFORMER, HORIZONTAL DRIVE, HDT
T801 ⚠	1-439-298-00	TRANSFORMER ASSY, FLYBACK, FBT

THERMISTOR

TH501	1-800-202-XX	THERMISTOR S-10K

Ref.No.	Part No.	Description				Remark
	♦:1-608-455-00	H BOARD				
		*******				

VARIABLE RESISTOR

RV901	1-228-771-00	RES, VAR, CARBON	1K			
RV902	1-228-773-00	RES, VAR, CARBON	100K			
RV903	1-228-772-00	RES, VAR, CARBON	50K			

****

	♦:1-608-456-00	J BOARD				
		*******				

RESISTOR

R101	1-246-446-00	CARBON	75	5%	1/4W	
R102	1-246-446-00	CARBON	75	5%	1/4W	

SWITCH

S101	1-516-576-00	SLIDE SWITCH
S102	1-516-576-00	SLIDE SWITCH
S103	1-516-576-00	SLIDE SWITCH

****

	♦:1-608-457-00	Z BOARD				
		*******				

CAPACITOR

C812	1-123-356-00	ELECT	10MF	20%	16V

DIODE

D804 ⚠	8-719-300-70	DIODE RH1C

TRANSISTOR

Q802 ⚠	8-729-137-32	TRANSISTOR 2SC2373

RESISTOR

R802 ⚠	1-206-497-61	METAL	2.7	5%	3W	F
R808	1-246-467-00	CARBON	560	5%	1/4W	
R809	1-246-473-00	CARBON	1K	5%	1/4W	

SWITCH

S801	1-552-897-00	SWITCH, LEVER
S802	1-552-897-00	SWITCH, LEVER

****

MISCELLANEOUS

****

	1-561-167-00	CONNECTOR
⚠	1-534-517-00	3P AC CORD
	1-536-392-XX	L-TYPE TERMINAL STRIP
L901 ⚠	1-451-216-21	DEFLECTION YOKE

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

- **The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.**

When indicating parts by reference number, please include the board name.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
NL901	⚠ 1-519-108-XX	LAMP, NEON ASSY	
S901	⚠ 1-552-895-00	SWITCH, PUSH	
T901	⚠ 1-447-388-00	TRANSFORMER, POWER	
V901	⚠ 1-546-046-00	CATHODE-RAY TUBE (B/W), C935P4	

****

ACCESSORIES AND PACKING MATERIALS

****

Part No.	Description	Remark
3-701-629-00	BAG, POLYETHYLENE	
3-701-630-00	BAG, POLYETHYLENE	
4-027-221-00	CUSHION	
4-027-302-00	INDIVIDUAL CARTON	
4-309-407-04	BAG, POLYETHYLENE	
4-340-203-00	PLATE, NUMBER	
4-491-213-22	INSTRUCTION	
4-491-327-22	REGISTRATION	
4-493-695-21	MANUAL, INSTRUCTION	

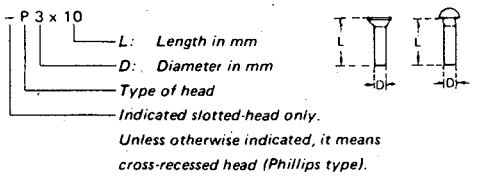
When indicating parts by reference number, please include the board name.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

HARDWARE NOMENCLATURE

Screw:



Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazier-head screw	

Nut, Washer, Retaining ring:

N 3
- *Diameter of usable screw or shaft*
- *Reference designation*

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

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PVM-91

SONY®

SERVICE MANUAL

US Model
Canadian Model
Serial No: 17681 and later

SUPPLEMENT-1

File this supplement with the service manual.

INTRODUCTION

1. The CRT and TRANSFORMER will be changed to new parts.

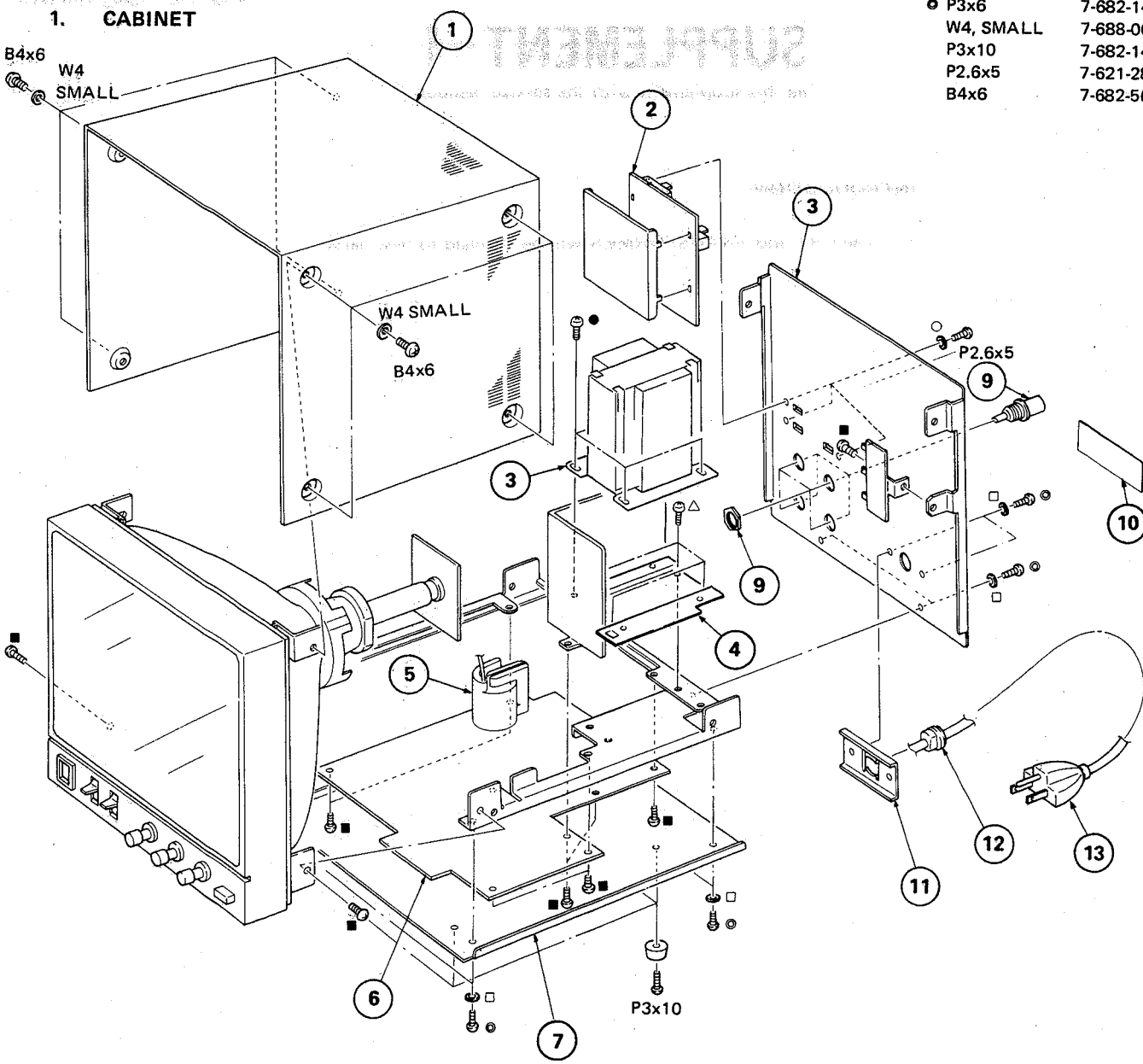
MICROFILM

5. EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

● BVTP4x10	7-685-660-14
○ W2.6, SMALL	7-688-002-02
△ BVTP4x8	7-685-659-79
■ BVTP3x10	7-685-647-79
□ W3, SMALL	7-688-003-02
⊙ P3x6	7-682-147-09
W4, SMALL	7-688-004-02
P3x10	7-682-149-01
P2.6x5	7-621-284-10
B4x6	7-682-560-09

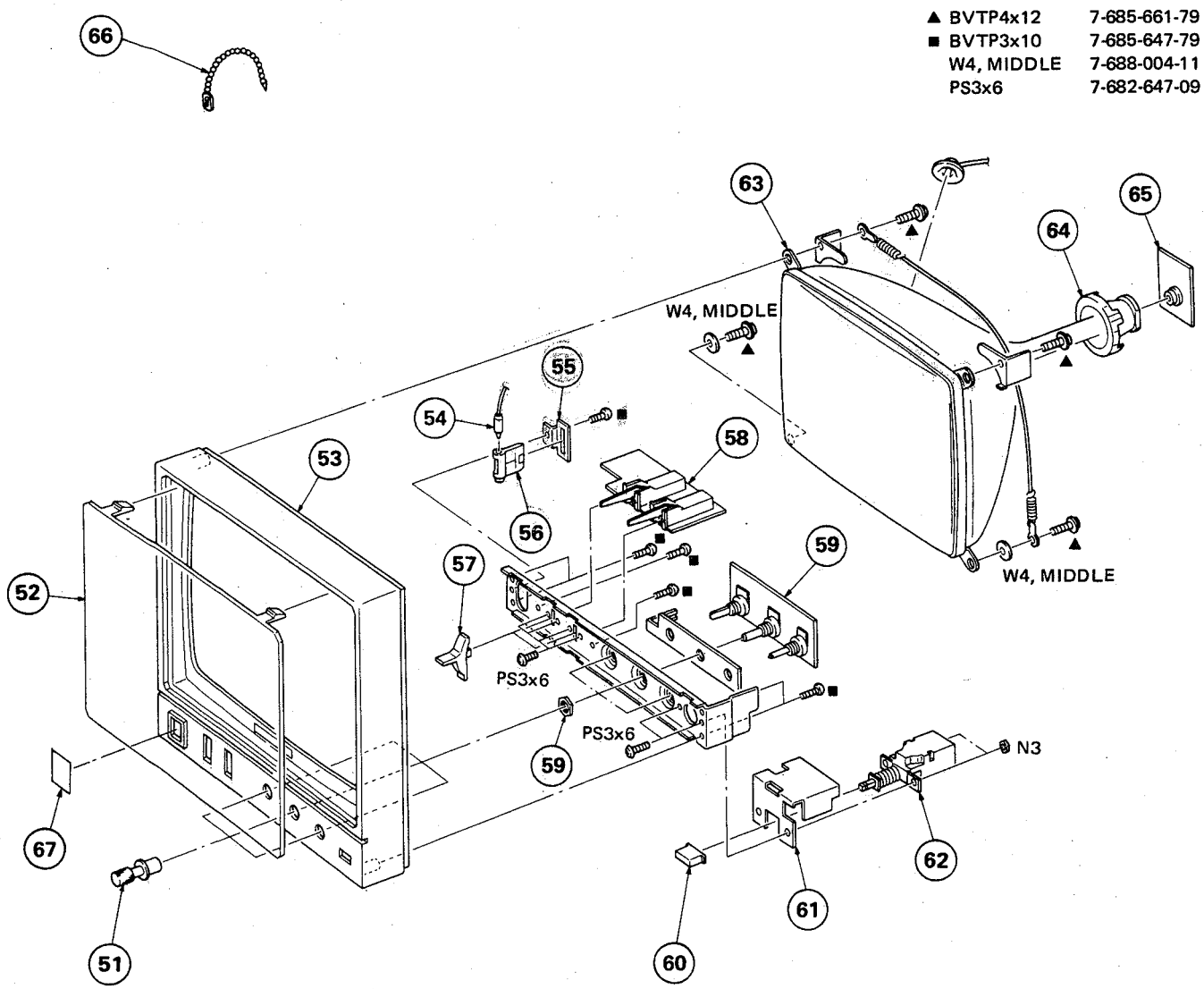
1. CABINET



No.	Part No.	Description	Remark
1	4-027-217-00	CABINET	
2	*1-608-456-11	J BOARD	
3	⚠ 1-449-186-11	TRANSFORMER, POWER	
4	4-027-226-01	BRACKET, TRANSFORMER	
5	1-439-298-00	TRANSFORMER ASSY, FLYBACK	
6	*A-1340-481-A	MOUNTED PCB, D	
7	*4-027-213-00	PLATE, BOTTOM	

No.	Part No.	Description	Remark
8	4-027-214-00	PANEL, REAR	
9	1-561-167-00	CONNECTOR	
10	*4-027-301-00	LABEL, MODEL NUMBER (CND)	
11	*4-025-824-00	HOLDER, BUSHING	
12	⚠ 2-045-063-00	STOPPER, CORD	
13	⚠ 1-534-517-00	3P AC CORD	

2. BEZEL



No.	Part No.	Description	Remark
51	X-4316-209-0	KNOB ASSY, CONTROL	
52	4-027-212-00	FILTER	
53	X-4027-202-1	BEZEL ASSY	
54	⚠ 1-519-108-XX	NEON LAMP ASSY	
55	*4-308-211-00	HOLDER, NEON LAMP	
56	*4-027-202-00	HOLDER, LAMP	
57	4-335-954-02	KNOB (2P), LEVER SWITCH	
58	*1-608-457-11	Z BOARD	
59	*1-608-455-11	H BOARD	
60	4-335-962-00	PUSH BUTTON	
61	*4-027-218-00	BARRIER	
62	⚠ 1-552-895-00	SWITCH, PUSH	
63	⚠ 1-546-048-11	CATHODE-RAY TUBE (B/W) E2733B4	
64	⚠ 1-451-216-21	DEFLECTION YOKE	
65	*1-608-454-11	C BOARD	
66	4-308-870-00	CLIP, LEAD WIRE	
67	4-340-203-00	PLATE, NUMBER	

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